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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/337,667	06/22/1999	YOSHIHARU SASAKI	Q54770	9266

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EXAMINER

PHAM, HAI CHI

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 02/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/337,667

Applicant(s)

SASAKI ET AL.

Examiner

Hai C Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Appeal Brief filed on 11/25/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-21 is/are pending in the application.
- 4a) Of the above claim(s) 6-11, 12/6-11, 13-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,12/1-2, 12/4-5, and 17-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Reopening of Prosecution

1. In view of the Appeal Brief filed on 25 November 2002, PROSECUTION IS HEREBY REOPENED. The rejection of the pending claims is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Election/Restrictions

2. Claims 6-11 and corresponding dependencies of claim 12 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.

Claims 13-16 remain withdrawn from consideration as being directed to a non-elected invention, the invention having been constructively elected by original presentation as discussed in the Office Action mailed 23 October 2000 (Paper #6).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not supported by the specification, namely “adhering the image receiving layer onto a whole recording region of the recording paper simultaneously” (emphasis added). The specification describes at page 13, line 11, that “the image receiving sheet 5 is wound on the recording paper 7” (emphasis added). The fact of wounding the receiving sheet on the recording paper to cover the whole recording region of the recording paper indicates that the receiving sheet is laid upon the recording paper during the full rotating process of the drum but definitely not *simultaneously*. Applicants also point to Fig. 6 to show the simultaneous adherence of the receiving sheet against the recording paper. However, Fig. 6 only shows the *final position* of the receiving sheet when the wounding of the receiving sheet is properly done. For the purpose of completing the examination of the application, claim 18 will be considered without the inclusion of the word “simultaneously”.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 12/1, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takanashi et al. (U.S. 4,527,171) in view of Michelson (U.S. 6,204,874 B1).

Takanashi et al. teaches the claimed invention except the toner sheet, provided as a cut sheet form, being wound onto a surface of the image-receiving layer (claim 1), the image receiving layer being provided in a form of a cut sheet (claim 19), the recording paper being attached to the recording drum by suction (claim 20). Thermal binder transfer sheet (4) is an image-receiving sheet having an image receiving layer (4b) and a substrate (4a). The sheet is attached to the recording paper by roller (6) to adhere the image-receiving layer on a surface of at least a whole recording region of the recording paper (see Abstract lines 11-14). The substrate is separated by take-up reel (5b) such that only the image-receiving layer is transferred onto the recording paper (see column 2, lines 36-45). All of the method steps in Takanashi et al. are clearly performed on the recording drum (2), as shown in Fig. 1.

Michelson discloses use of toner sheets (referred to by Michelson as "donor sheets"), provided as a cut sheet form, in place of a roll, wherein a toner sheet is wound onto a recording paper. Michelson further teaches the receiver sheet (8) being provided in the form of a cut sheet, and the recording drum (1) being a vacuum-type drum. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute toner sheets, provided as a cut sheet form, for the roll in the

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Takanashi et al. apparatus, as well as the image receiving layer as a cut sheet along with the use of a vacuum-type recording drum, wherein the toner sheets are wound onto the recording paper and thus onto the image receiving layer thereon, because such substitution would overcome the various disadvantages of roll media detailed by Michelson (see column 1, lines 44-65), thereby providing greater flexibility in providing desired colors and reducing operating cost through reduced media cost as a consequence of increased manufacturing yield.

With regard to claims 18 and 21, Takanashi et al. teaches the image receiving layer (binder layer 9a) adhering onto a whole recording region of the recording paper (recording sheet 3), and the recording paper, the image receiving layer, and the toner sheet being disposed one atop another along an outer circumferential surface of the recording drum (2), over at least half of the circumference of the recording drum (Fig. 5a).

7. Claims 2, 4-5, 12/2/1, and 12/5/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takanashi et al. in view of Michelson, as applied to claim 1 above, and further in view of Fujimura et al. (U.S. 5,397,763).

Takanashi et al. in view of Michelson teaches the claimed invention except the cushion layer and the protective layer being formed as claimed.

Fujimura et al. teaches formation of a cushion layer formed between the surface of the recording paper and the image receiving layer in physical contact with the surface of the recording paper (column 7, line 45 through column 8, line 11 –1, see in particular

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column 7, lines 48-52, which indicates the physical contact by endowing the cushion layer with adhesiveness instead of providing an adhesive layer). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a cushion layer on the outer layer side of the image receiving layer (4b) on thermal binder transfer sheet (4) in Takanashi et al., as modified by Michelson, for the purpose of improving sharpness of the transferred image.

Fujimura et al. further teaches provision of a protective layer on a transferred image to protect the image from damage (column 10, lines 62-66; column 11, line 58 through column 12, line 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to form a protective layer on the image recorded surface in Takanashi et al., as modified by Michelson, for the purpose of protect the transferred image from damage.

8. Claims 2 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takanashi et al. in view of Michelson, as applied to claim 1 above, and further in view of Koguchi et al. (U.S. 5,300,398).

Takanashi et al. in view of Michelson suggests the claimed invention except the cushion layer, which is in physical contact with an entire surface of the recording paper on at least one side.

- a. Koguchi et al. suggests providing a cushion layer (28) between the surface of a recording paper (26) and an image receiving layer (16) and suggests in Figs. 3A-31D that the cushion layer is in physical contact with

an entire surface of the recording paper on at least one side, to confine any dust or dirt that may be present at the interface between the image receiving layer and the colorant layer (toner layer on the toner sheet). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a cushion layer between the surface of the recording paper and an image receiving layer and in physical contact with an entire surface of the recording paper on at least one side in the modified Takanashi et al. method because such provision would enable confining any dust or dirt that may be present at the interface between the image receiving layer and the colorant layer and thereby improve image quality.

Response to Arguments

9. Applicants' arguments filed 25 November 2002 (Appeal Brief) have been fully considered but they are not persuasive.

10. Applicants argue that:

- (a) The binder material described in Takanashi comprises materials such as wax", and that "[I]f such a binder material were to be included this would defeat the ability for the vacuum to hold subsequent sheets of donor materials to the drum without a redesign of the Michelson reference;
- (b) The binder material provided in Takanashi is provided in a continuous form. If the continuous binder forms of Takanashi were combined with Michelson, the continuous

roll form of the binder would necessarily obstruct the vacuum holes in the recording drum and eliminate the ability for the Michelson device to attach successive toner sheets onto the drum. The Michelson reference is completely silent as to such binders and how to apply such binders within the apparatus. Neither Michelson nor Takanashi makes any suggestions on changes in the form of how the binder should be applied to a recording sheet.

- (c) Fundamentally, the placement of the binder onto the receiving sheet in Takanashi and the subsequent heating of a coloring material onto the receiving sheet surface all rely on particular placements of the binder and the rolled colored material relative to the drum. The binder is provided by relaying out a continuous roll of material, while applying tension with the fuser element 6. Similarly, the continuous roll of the color material is provided to a surface of the binder material under tension. There is no indication of how an individual toner sheet could be adequately positioned against the binder absent the use of the continuous roll of the toner;
- (d) One skilled in the art is still left to consider how to keep the toner sheet disposed against the binder (Takanashi, element 4b) during the transfer. In this connection, Michelson teaches that the contact of the toner to its underlying target is by suction. However, as previously discussed, it would not be possible to provide the relative positioning of the toner sheet by suctioning in the cited combination, because in Takanashi, the underlying binder material (formed as a continuous roll), would not permit an overlap of the toner sheet over an edge of the binder material that would allow suction to be used as a positioning mechanism;

- (e) Moreover, the mere combination of Michelson and Takanashi would not obviate many of the deficiencies in the art, including the additional step for transferring images to a final recording sheet. In particular, the mere fact that Michelson uses a paper sheet 8 does not necessarily implicate forming an image to an image-receiving layer of a recording sheet. A subsequent transfer may be required. Takanashi is directed to a fundamentally different type of image transfer than Michelson. Therefore, one skilled in the art would not combine the formation of images to the image receiving layer based on the teachings of Michelson;
- (f) Moreover, the two references teach a fundamentally different technique, where Michelson likely includes the additional steps and equipment that was necessary in conventional techniques, but which are obviated in the present invention. This further demonstrates that the primary rejection is based in improper hindsight reconstruction of the claim rather than on what the references fairly suggest;
- (g) Appellant would emphasize that Fujimura is not applicable to the present invention and may not be combined with the primary combination. Fujimura relates to the transfer of previously formed images onto a receiving substrate, and thus would have fundamentally different concerns than the present invention. Specifically, the claims include the transfer of toners in accordance with certain recording data. By contrast, previously recorded images would not include toner transfer according to such data. Additionally, Fujimura requires simultaneous application of heat and pressure to provide the transfer, with heat and pressure being applied on opposite sides of the image-forming substrate. This would not be possible with the drum mechanisms discussed in Michelson.

With respect to Applicants' argument (a), it is noted that Michelson is aware that the binder material may comprise wax such that "some receiver sheets are not permeable to vacuum" (Michelson, col. 3, lines 52-53). Michelson then teaches a way to load the donor sheets onto the vacuum drum and over the receiver sheet to overcome the non-permeability of the receiver sheet by suggesting that "the donor sheets would extend beyond the receiver sheet by a small amount (1-2 cm) to allow the vacuum to grip them" (Michelson, col. 3, lines 53-55). Therefore, there is no need for a redesign of the Michelson reference as Applicants suggest to overcome Applicants' concerns, which are simply not existent.

With respect to Applicants' argument (b), and contrary to Applicants' concerns, the continuous binder forms of Takanashi would not "obstruct the vacuum holes in the recording drum", but would perfectly fit with the length of the recording medium such that the surface of the recording drum is not completely covered as it is clearly shown in Takanashi's Figs. 5 and 5a. Takanashi further teaches how the binder layer should be applied to the recording sheet (3) either as a continuous layer (4b, fig. 1) supported on the base (4a) in a first embodiment or as a sheet of layer (9a, Figs. 2, 3, 4) supported on the polyester base alternately with the ink layer (9b) in further modified embodiments. In each of the noted embodiments, the "binder layer (9a) is first positioned so that its start line is located above the thermal head 1 and aligned with the start line of the recording sheet 3" (emphasis added) (Takanashi, col. 3, lines 13-15), and the positioning of the binder layer over the recording sheet is so controlled with the

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aid of the sheet edge detector (30) of the binder mode circuit (34). Since the start line of the binder layer is aligned with the start line of the recording sheet, the continuous binder layer (4b) in the first embodiment would necessarily be cut at some point, although Takanashi does not explicitly describe it.

With respect to Applicants' argument (c), the Applicants are reminded that the rejection of the claims is based on the Takanashi reference as modified by Michelson reference, wherein the rolled color material is replaced by individual color material sheets in cut sheet forms as taught by Michelson. Michelson provides enough arguments about the advantages of using individual donor sheets as compared to donor sheets supplied in roll form [similar to that of Takanashi] (see Michelson, Figs. 1a-1b), and then describes how these individual donor sheets would be "adequately positioned against the binder" and obviously without "the use of the continuous roll of the toner" (Michelson, Figs. 3a-3f).

With respect to Applicants' argument (d), where Applicants are concerned "how to keep the toner sheet disposed against the binder since the underlying binder material is formed as a continuous roll", Takashi discloses that the start line of the binder layer (4b) supported on a continuous roll of substrate (4b) is always aligned with the start line of the recording sheet (3) (Takanashi, Fig. 1) for each printing session with a new recording sheet. This would suggest that the binder layer is necessary cut (but not explicitly disclosed) to fit the length of the recording sheet such that the continuous binder layer would not roll over itself and the already covered recording sheet when the

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drum is kept rotating in such that the surface of the drum is not completely covered as shown in Fig. 5a.

In response to Applicants' arguments (e) and (f) that "Takanashi is directed to a fundamentally different type of image transfer than Michelson", and that "the two references teach a fundamentally different technique", it is noted that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, Michelson provide a critical teaching in using donor sheets in cut sheet forms, which is more advantageous than using donor sheets supplied on roll form.

In response to Applicants' arguments (g) that "Fujimura is not applicable to the present invention and may not be combined with the primary combination", " it is not necessary that the inventions of the references be physically combinable to render obvious the invention under review." *In re Sneed*, 710 F.2d 1544, 218 USPQ 385, 389 (Fed. Cir. 1983). Moreover, "combining the teachings of references does not involve an ability to combine their specific structures." *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973)

For the above reasons, claims 1, 2, 4, 5, 12, and 17-21 remain rejected under 35 U.S.C. 103(a) as presented in this office action.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin R. Fuller can be reached on (703) 308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722, (703) 308-7724, (703) 308-7382, (703) 305-3431, (703) 305-3432 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



HAI PHAM
PRIMARY EXAMINER

February 4, 2003